

4.7 Environmental Mitigation

Long Range Transportation Plans must include a discussion of environmental mitigation activities. "A discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than at the project level. The discussion shall be developed in consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies" (Electronic Code of Federal Regulations, 2007).

Since MPO transportation planning is regional this discussion focuses on broad environmental issues and strategies.

Federal regulations define mitigation as:

- Avoiding an impact not taking an action or part of the action,
- Minimizing impacts by minimizing the sized of the action,
- Repairing, rehabilitating, or restoring the affected resource(s),
- Reducing, or eliminating the impact, by preservation and maintenance operations during the action, or
- Replacing or providing substitute resources or environments. (Source: 40 CFR 1508.20)

Sequencing is an ordered approach to mitigation that involves:

- Understanding the affected environment,
- Assessing effects on the environment during project development, and
- Developing mitigation strategies as an integral part of the alternatives development and analysis.

FHWA's mitigation policy states: "Measures necessary to mitigate adverse impacts will be incorporated into the action and are eligible for Federal funding when the Administration [FHWA] determines that:

- The impacts for which mitigation is proposed actually result from the Administration action; and
- The proposed mitigation represents a reasonable public expenditure after considering the impacts of the action and the benefits of the proposed mitigation measures.

In making this determination, the Administration will consider the extent to which the proposed measure(s) would assist compliance with a Federal law, Executive Order, Administration regulation or policy. (Source: 23 CFR 771.105(d))

4.7.1 Identifying Sensitive Areas

There are numerous environmentally sensitive areas found throughout the Piedmont Triad region. Many areas are too small or too numerous to map at a regional level and can only be clearly identified through a project level analysis. Some areas are yet to be identified and will

only become known once a project level analysis is completed, such as caves, sinkholes, and wetlands. When a project is ready to move from the Long Range Transportation Plan into the design / engineering phases, the project sponsor will conduct any necessary analysis as required by state and federal regulations to determine the type and location of environmentally sensitive areas within the project study area.

In developing project lists for the LRTP, the High Point MPO conducts top level analysis to determine the potential need for future environmental mitigation. Specifically, the (insert name here) MPO looks at proposed project locations throughout the region to determine their proximity to natural or socio-cultural resources. That analysis provides early guidance to project sponsors to develop mitigation strategies.

4.7.2 Environmental Mitigation Activities

The High Point area is committed to minimizing and mitigating the negative effects of transportation projects on the natural and built environments in order to preserve our quality of life. In doing so, the MPO recognizes that not every project will require the same type and/or level of mitigation. Some projects such as new roadways and roadway widenings involve major construction with considerable earth disturbance. Others like intersection improvements, street lighting, and resurfacing projects involve minor construction and minimal, if any earth disturbance. The mitigation efforts used for a project should be dependent upon how severe the impact on environmentally sensitive areas is expected to be. The following three step process is used to determine the type of mitigation strategy to apply for any given project:

1. Identify environmentally sensitive areas throughout the project study area;
2. Determine how and to what extent the project will impact these environmentally sensitive areas; and
3. Develop appropriate mitigation strategies to lessen the impact these projects have on the environmentally sensitive areas.

To the extent possible, transportation projects are minimized off-site disturbance in sensitive areas and develop strategies to preserve air and water quality, limit tree removal, minimize grading and other earth disturbance, provide erosion and sediment control, and limit noise and vibration. Where feasible, alternative designs or alignments are developed that would lessen the project's impact on environmentally sensitive areas.

The three step mitigation planning process is designed solicit public input and offer alternative designs or alignments and mitigation strategies for comment by the environmental review agencies, MPO and local governments. For major construction projects, such as new roadways, or for projects that may have a region-wide environmental impact, a context sensitive solutions process is considered in which considerable public participation and alternative design solutions are used to lessen the impact of the project.

The table below details mitigation activities that are considered to deal with the primary areas of concern.

Impacts	Mitigation Measures
Air Quality	Designate Pedestrian/Transit Oriented Development Areas Adopt Local Air Quality Mitigation Fee Program Develop energy efficient incentive Programs Adopt air quality enhancing design guidelines Fund TCM Program
Archaeological	Archaeological Excavation Design Modifications to avoid area Educational Activities
Community Impacts	Bridge Community Sidewalks Bike Lanes Develop recreational areas Traffic Calming Oral History Project
Environmental Justice Communities	Property Owners paid fair market value for property acquired Residential and Commercial Relocation
Farmland	Protect one to one farmland acre for every acre converted Agricultural conservation easement on farmland Compensation
Fragmented Animal Habitats	Construct overpasses with vegetation Construct underpasses, such as culverts and viaducts Other design measures to minimize potential fragmenting of animal habitats
Historic Sites	Relocation of Historical Property Design Modification Landscaping to reduce visual impacts Photo documentation Historic archival recording to present historic information to the public
Light Impacts	Lens Color Direction of lighting Low Level lighting
Noise	Depressed Roads Noise Barriers Planting Trees Construct Tunnels

Park Impacts	Construct bike/pedestrian pathways Dedicate land Compensation for park dedication fees Replace impaired functions
Streams	Stream Restoration Vegetative buffer zones Strict erosion and sedimentation control measures Consider best practices for stormwater management
Threatened & Endangered Species	Preservation Enhancement or restoration of degraded habitat Creation of new habitats Establishment of Buffer areas around existing habitats Modifications of land use practices Restrictions on land access
Viewshed Impacts	Vegetation and Landscaping Screening Buffers Earthen Berms Camouflage Lighting
Wetlands	Compensation Wetland Restoration Creation on new wetlands Strict erosion and sedimentation control measures

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Agency	Division of Agency	Contact Information	Available Data	Format / Location
N.C. Department of Agriculture and Consumer Services (NC DA&CS)	Environmental Programs Division/ Farmland Preservation	Maximilian (Max) Merrill Environmental Program Specialist 1035 Mail Service Center, Raleigh, NC 27699 maximilian.merrill@ncmail.net 919-733-7125	Livestock Operation Site, Soils, Historical Farm Sites, Land Cover data	Contact person- Emergency Program
N.C. Department of Cultural Resources (DCR)	State Historic Preservation Office (SHPO) Office of State Archeology (OSA)	Sarah McBride Preservation Specialist for Transportation Projects sarah.mcbride@ncmail.net 919-733-6545 x 225 Renee Gledhill-Earley Environmental Review Coordinator 4617 Mail Service Center, Raleigh, NC 27699 renee.gledhill-earley@ncmail.net 919-733-4763 x 246 Dolores Hall Deputy State Archaeologist dolores.hall@ncmail.net 919-733-7342	Historic Properties and Archeological Sites	USGS Quad Maps Available in SHPO and OSA Offices by appointment
N.C. Department of Environment and Natural resources (DENR)	CGIA	David Giordano NC OneMap Database Administrator 1601 Mail Service Center, Raleigh, NC 27699 david.giordano@ncmail.net 919-733-2090 or 919-715-3770	NC OneMap GIS Database	http://www.nconemap.net

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NCDENR- Division of Water Quality	DWQ / Transportation Permitting Unit	Brian Wrenn 512 N. Salisbury St., Raleigh, NC 27604 brian.wrenn@ncmail.net 919-733-5715 Beth Barnes - NEPA		Contact person
N.C. Department of Crime Control & Public Safety	Division of Emergency Management	H. Douglas Hoell, Jr. Director 116 West Jones St, Raleigh, NC 919-733-3825 dhoell@ncem.org	Homeland Security	
US Environmental Protection Agency (EPA)	Region 4, Environmental Information Services Branch	Rick Durbrow Program Analyst (GIS Contact) Sam Nunn Atlanta Federal Center 61 Forsyth Street, S.W., Suite 17T50 Atlanta, GA 30303 durbrow.rick@epa.gov 404-562-8282	Southeastern Ecological Framework and Region 4 Atlas	http://www.epa.gov/region4/gis http://geobook.sain.utk.edu
US Environmental Protection Agency (EPA)	Region 4, NEPA Program, Raleigh Office	Christopher A. Militscher 109 TW Alexander Drive, Durham, NC 27709 militscher.chris@epa.gov 919-856-4206	NEPA compliance and cross-cutting issues (e.g. CERCLA& RCRA sites)	http://www.epa.gov/compliance/resources/faqs/nepa/index.html
US Environmental Protection Agency (EPA)	Region 4, WMD, WCNPSB, Wetlands Regulatory Section Raleigh Office	Kathryn H. Matthews 109 TW Alexander Drive, Durham, NC 27709 matthews.kathy@epa.gov 919-541-3062	Aquatic resource avoidance and minimization, 404 Permits, mitigation	www.epa.gov/wetlands

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US Fish & Wildlife Service (USFWS)	NC Field Offices (Raleigh), Ecological Services	Raleigh Field Office- Pete Benjamin Ecological Services Field Supervisor (Raleigh) P.O. Box 33726, Raleigh, NC 27636 pete_benjamin@fws.gov 919-856-4520 x 11 Gary Jordan - NEPA	1. Priority natural communities & habitat 2. Info on federally listed species (by county) 3. Species recovery plans	Contact Person http://www.fws.gov/southeast/es/ http://www.fws.gov/southeast/es/
NC Wildlife Resources Commission (WRC)	Inland fisheries- habitat conservation	Travis Wilson 1751 Varsity Drive, Raleigh, NC 27695 travis.wilson@ncwildlife.org	Eastern DOT Projects Coordination/ Contact; Wildlife Action Plans	http://www.ncwildlife.org/
NC Wildlife Resources Commission (WRC)		Shannon Deaton or Vann Stancil	Swimming with the Current booklet	Contact person
Federal Highway Administration (FHWA)	NC Division Office Planning & Program Development Unit	Bill Marley bill.marley@fhwa.dot.gov 310 New Bern Avenue, Suite 410, Raleigh, NC 27601 919-856-4330x 114 Loretta Barren loretta.barren@fhwa.dot.gov 919-856-4330 x 111 Eddie Dancusse eddie.dancusse@fhwa.dot.gov 919-856-4330 x 112	Legislation/ evidence, Peer exchange programs, linking planning & NEPA, CSS tools, Funding options / opportunities, air quality	Contact person
North Carolina Department of Transportation	Transportation Planning Branch	MPO Coordinators 1554 Mail Service Center, Raleigh, NC 27699 919-733-4705 MRAbuya@dot.state.nc.us (and others)		

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Piedmont Triad Council of Governments	Rural Planning Organization	Hanna Cockburn RPO Coordinator 2216 W. Meadowview Road Suite 201, Greensboro, NC 27407 336-294-4950 hcockburn@ptcog.org		
Federal Transit Authority	Region 4 Administrator	Keith Melton FTA Region IV 230 Peachtree Street, Suite 800 Atlanta, GA 30303 404-562-3514 Keith.Melton@dot.gov		
US Army Corp of Engineers (USACE)	USAED, Wilmington District, Regulatory Division	Eric Alsmeyer P.O. Box 1890, Wilmington, NC 28402 eric.c.alsmeyer.army.mil 919-876-8441 x 23 or 919-876-8441 x21 Elizabeth Porter Elizabeth.D.Porter@usace.army.mil 910-251-4810 or 910-251-4511 Jean Manuele or John Thomas - NEPA	Army permit requirements and wetland information	www.saw.usace.army.mil/wetlands

4.7.3 Affects related to Agriculture

Agency: NC Dept. of Agriculture & Consumer Services



North Carolina is losing its farmland at an alarming rate. Between 2003-2006 NC lost 300,000 acres of farmland and 5,500 farms to conversion. The critical mass is being lost to support our agricultural infrastructure that supports the agricultural economy. Properly maintained farmlands provide ground water recharge areas for most watersheds in NC. Properly maintained farms also provide the environmental services of clean air and wildlife habitat. When considering long range transportation plans that will impinge on agricultural lands; transportation authorities need to consider the effects on the following agricultural related activities and issues:

1. Location of Prime Farmland
2. Swine, Cattle, Poultry Facility Locations (housing locations, spray fields, transportation routes)
3. Multiple Tract Ownership
4. Access to, from and around Highways
5. Mitigation for loss of Farmlands

Infrastructure can have a negative and positive consequence on the agricultural economy of an area. Below is a list of needs and concerns that the agricultural industry has for infrastructure.

Needs

1. Facilitate transportation to markets
2. Expand customer access to farms (agri-tourism, value added, u-pick)
3. Increase visibility of agricultural economy
4. Increase availability of services to rural communities
5. Decrease commute time to off-farm employment for family farmers
6. Increased economic activity of rural counties

Concerns

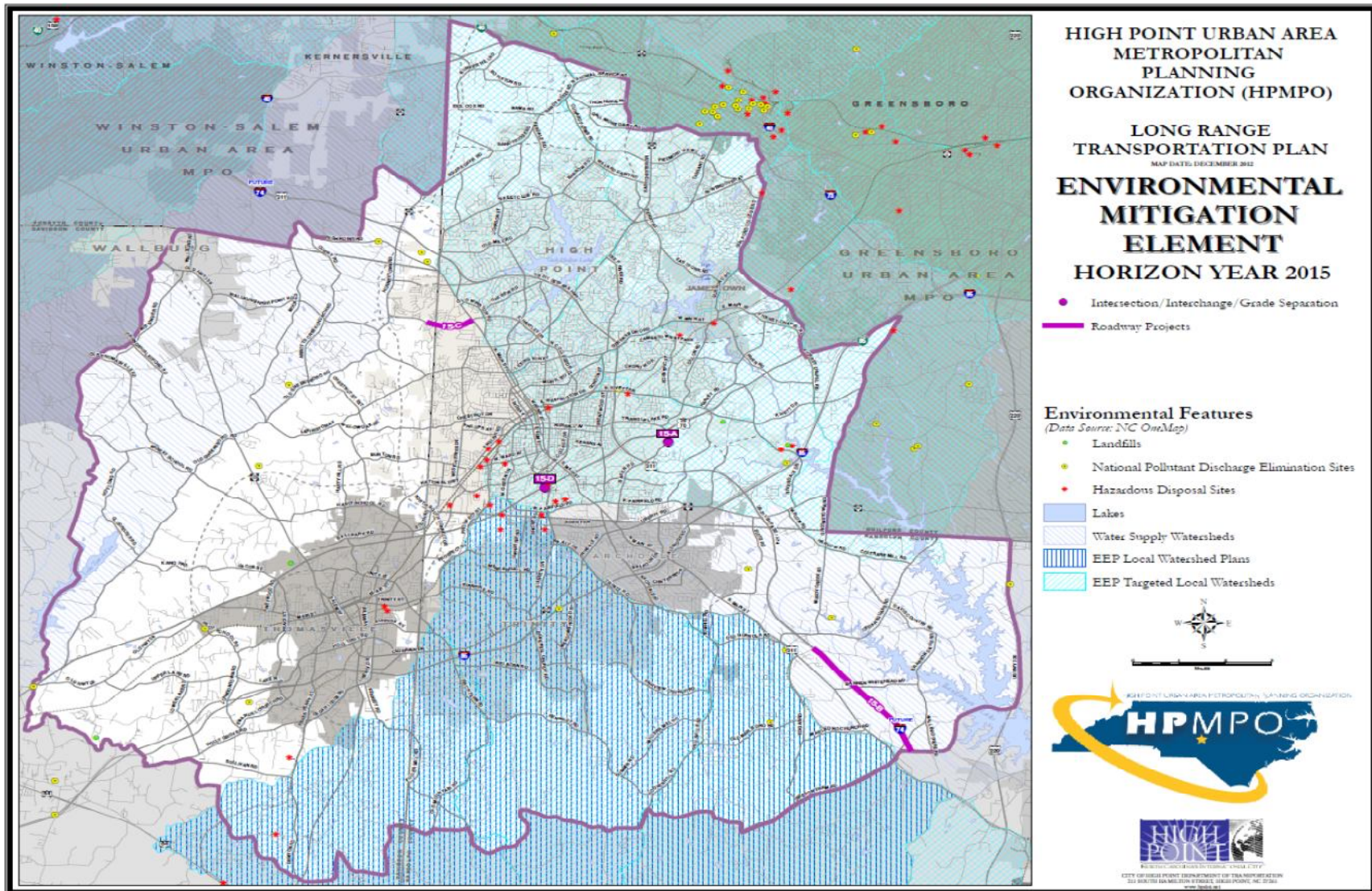
1. Leads to urban growth (Heavner 2000)
2. Restricts access to parcels, fragmentation
3. Creates nuisance suits because of incompatible land uses (noise, manure, spraying, slow equipment)
4. Jeopardizes most valued soils due to conversion threats
5. Increases land values prohibit new farmers from joining farming industry, prospective development value can increase land by 80%
6. Increased pressure from water and land use restrictions (etj regs, town ordinances)

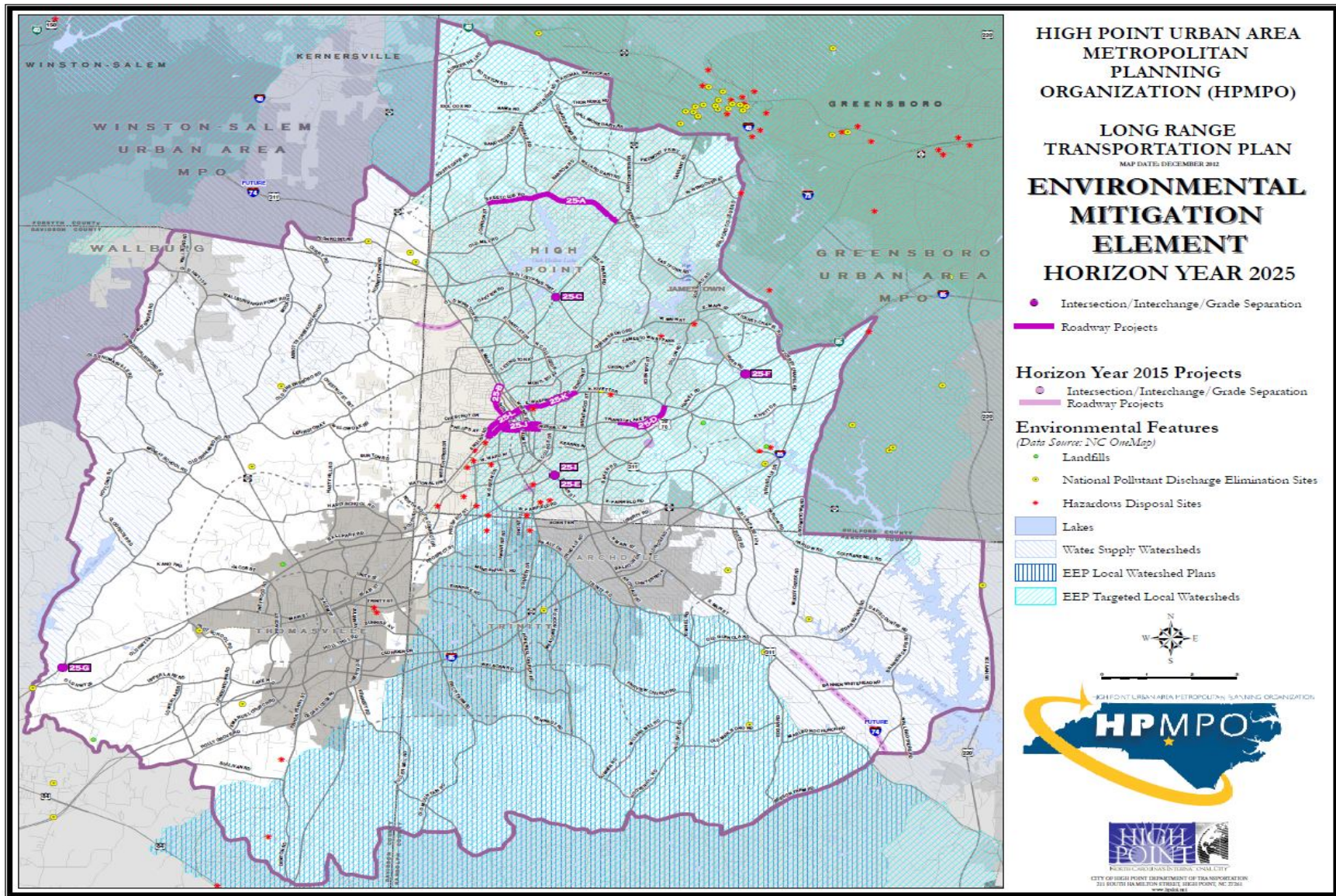
As North Carolina grows, we need to look at ways to mitigate for the loss of farm and forestlands. Below are a few tools, listed in order of permanence and aggressiveness that local governments can use to mitigate and preserve their farmlands.

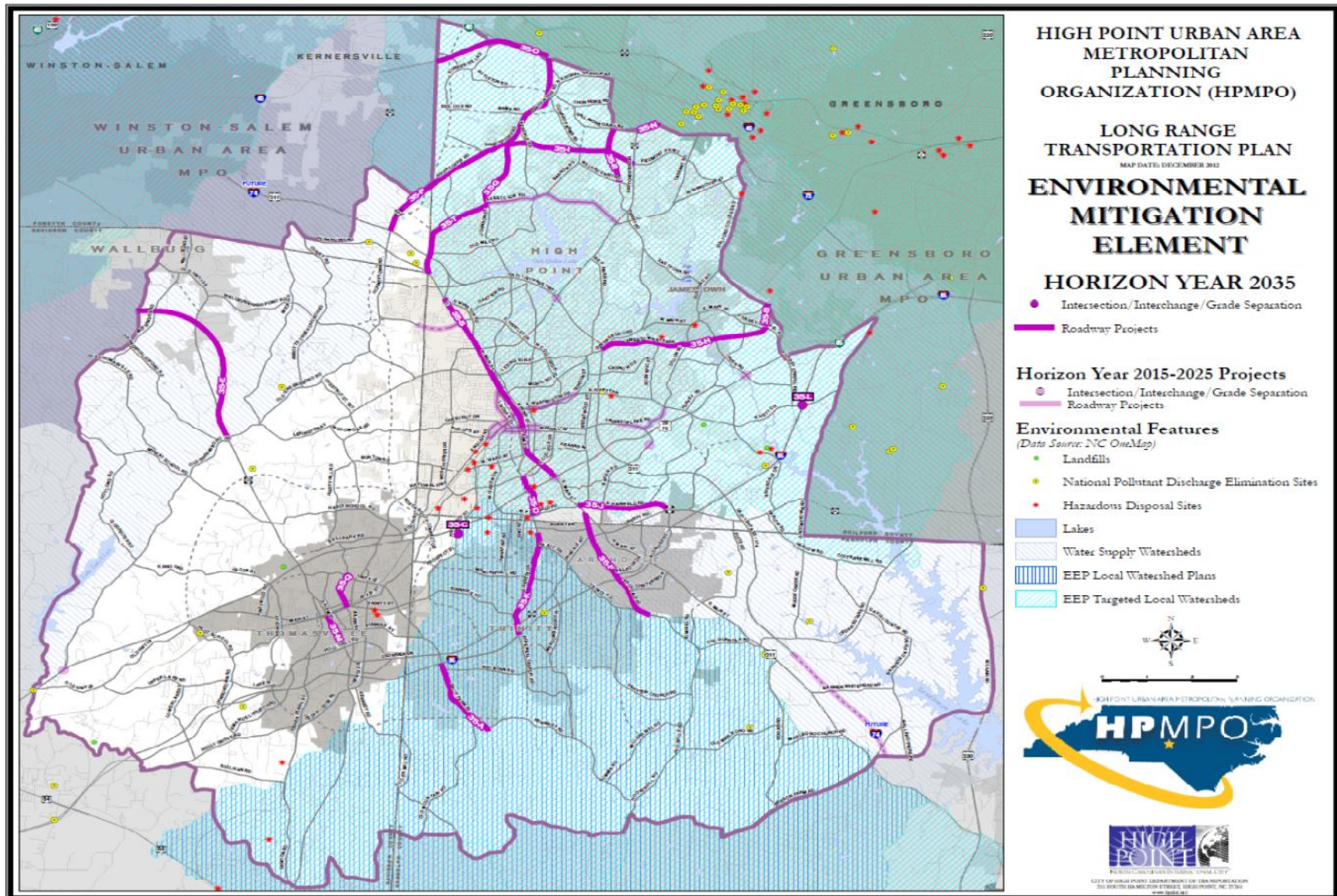
Mitigation

1. Voluntary Agricultural Districts

2. Enhanced Agricultural Districts
3. Conservation Agreements
4. County Wide Farmland Protection Plans
5. Agricultural Zoning
6. Agriculture Development Projects
7. Conservation Easements
8. Purchase of Development Rights Programs
9. Transfer of Development Right Programs







Works Cited

Electronic Code of Federal Regulations. (2007, February 14). Retrieved November 7, 2012, from Government Printing Office: <http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&sid=7f5985b5d2fe301f3fd5a6f537e6bfb8&rgn=div5&view=text&node=23:1.0.1.5.11&idno=23#23:1.0.1.5.11.3.1.12>